REMARKS/ARGUMENTS

35 USC 102 Claim Rejections

In paragraph 2 of the Final Action, the Examiner reiterates the 35 USC 102 rejection of claims 1, 2, 9, 15, 65, 66, 71, 79 and 80 as being anticipated by Vandenameele-Lepla (hereinafter D1). The wording of the rejection is identical to the previous Office Action, but usefully, the Examiner did provide some further insight into his position in the "Response to Arguments" section.

Specifically, in the response to arguments section, on page 12 of the Detailed Action at the very end of the first paragraph the Examiner states the following in response to Applicant's contention that D1 does not disclose a non-OFDM segment before/and/or/after an OFDM symbol because the guard period is a cyclic extension of the OFDM symbol:

> "a guard period may contain a partial extension of the OFDM symbol along with a zero amplitude signal, which is a non-OFDM symbol", emphasis added.

With respect, Applicant could find no basis for the underlined portion in D1. The only reference to the guard period in D1 is in paragraph 14 which says that the guard period contains a cyclic extension which is obviously still and OFDM signal. There is no reference to a zero amplitude signal. The Examiner has not refuted that a cyclic extension is not a non-OFDM segment, but is relying on the zero amplitude signal. This simply is not in the reference, and as such, the Examiner's logic on this point fails.

Furthermore, at the very end of page 12, in response to Applicants contention that the training symbols disclosed in D1 are embedded prior to the IFFT function and therefore are modulated with the rest of the data symbols, the Examiner indicated the training sequences are handled after the IFFT block (para. 0006). With respect, there is simply no basis for this statement, either in paragraph 6 or elsewhere.

Paragraph 6 of D1 states (see line 4):

> generating a plurality of modulated sub-carrier signals based on the data;

This relates to the generation of modulated symbols that are input, for example, to an IFFT block. The data is used to generate modulated signals, e.g. QAM, QPSK that are input to the IFFT block.

Paragraph 6 of D1 goes on to state (see line 6):

> transforming the plurality of modulated sub-carrier signals into a plurality of time-domain signals;

This relates to the frequency domain to time domain transformation, typically achieved by the IFFT block. Clearly, the output of the transformation is an OFDM symbol.

So far, there is nothing to debate. There is data, it is modulated, and then transformed into the time domain to produce an OFDM signal.

The paragraph goes on to discuss the training symbols. Referring now to line 14:

> "The subset of the plurality of time-domain signals includes training symbols that are embedded <u>into the data</u> for channel estimation purposes.", emphasis added.

It is clear that the training symbols are embedded into the data. It was already established that the data, when ultimately transmitted, is part of the OFDM symbol. Thus, the only possible logical conclusion is that the training symbols also form part of the OFDM symbol. There is no other possible reasonable interpretation of the reference. This is not even an interpretation issue – it is plainly clear on its face. If the training symbols form part of the OFDM symbol, they cannot possible form part of the non-OFDM segment.

The Examiner goes on to state "furthermore, even if the training sequences are embedded before IFFT processing, this still reads on the limitation of a non-OFDM segment being before/and/or/after a OFDM symbol".

The Examiner provides no basis for this whatsoever. If the training sequences are embedded before the IFFT, they form part of the OFDM symbol. How can they read on a "non-OFDM segment"? It cannot. Also, the claim language requires a non-OFDM symbol, and before/and/or/after the OFDM symbol a non-OFDM segment. The "before/and/or/after" language is important as this is clearly a time domain concept. Specifically, the non-OFDM segment that is before and/or after the OFDM symbol does not overlap in time with the OFDM segment. Obviously, this is not the case for data that is input to an IFFT – that is included in the OFDM symbol per se, and in no sense is it "before" or "after" the OFDM symbol of which it forms a part.

Finally, it is apparent that in the Examiner's response to arguments, he is simultaneously relying on BOTH

a) an argument that D1 teaches a guard period containing both a cyclic extension and a zero amplitude signal; and

b) an argument that the training sequences of D1 constitute a non-OFDM segment.

The flaw in the logic of this should be readily apparent. To the extent D1 teaches a) and b) as summarized above, (in fact, D1 teaches neither as detailed above):

if the Examiner is correct that the guard period of D1 in fact constitutes a non-OFDM segment (it doesn't) then why is the Examiner arguing that the training sequence of D1 which has nothing to do with the guard period, is the non-OFDM segment?

conversely, if the Examiner is correct that the training sequence in fact constitutes a non-OFDM segment (it doesn't), then why is the examiner arguing that the guard period of D1 which has nothing to do with the training sequence, is the non-OFDM segment?

It is respectfully submitted that Applicant has clearly established that D1 does not teach all of the claim limitations. As a direct consequence, there can be no anticipation. The Examiner is respectfully requested to withdraw the 35 USC 102 rejection of the claims.

In paragraphs 2 through 8 of the Office Action the Examiner goes on to raise a series of claim rejections under 35 U.S.C. 103(a). All of these rejections rely upon the Examiner's interpretation of Vandenameele-Lepla, in combination with one or more other references. Applicant has clearly established that the Examiner's application of Vandenameele-Lepla is incorrect, and on this basis, the combination of Vandenameele-Lepla with various references also fails to result in a proper claim rejection under 35 U.S.C. 103(a). In view of this, the Examiner is respectfully requested to reconsider and withdraw the rejections of the claims under 35 U.S.C. 103(a).

Note that in responding to the Office Action in this manner without commenting on the additional references that have been combined with Vandenameele-Lepla, Applicant is not conceding to the Examiner's interpretation of these other references. Rather, Applicant reserves the right to comment further on those references should they be combined with another potentially more relevant reference than Vandenameele-Lepla.

In view of the foregoing, early favorable consideration of this application is earnestly solicited. In the event that the Examiner has concerns regarding the present response the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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